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THE JOURNAL OF PHILOSOPHY

## THE PARADOX OF TEMPORAL PROCESS

IT is commonly assumed that the difficulties first raised by Zeno with regard to the possibility of motion have been pretty definitely disposed of in modern times by means of the mathematical analysis of continuity and infinity, in the way made familiar among us, for example, by Mr. Russell. William James, however, among others, remained to the end unconvinced of the validity of these modern solutions of the ancient problem, and in our own day Professor Whitehead also asserts the existence of an outstanding and unresolved difficulty. The residual problem is essentially the same for both James and Whitehead, and both of them propose to deal with it in much the same way. I wish here to enquire (1) What is the nature of the problem which men like James and Whitehead feel to be still outstanding? (2) Is the type of solution which they propose adequate to deal with the problem? and (3) Is the problem not really soluble in terms not involving the novel conceptions which they employ for this purpose?

James distinguishes between two types of infinite, called by him respectively the "standing" infinite and the "growing" infinite. To the first class belong infinites conceived as *already completed,* such as the infinite of space, of past time, of events now finished, of motions already accomplished, and the like. To the second belong infinites in *process* of completion, such as the infinites of motion, change, activity, conceived as actually occurring. In James' view the difficulties of the first sort of infinite are on the whole sufficiently disposed of by the modern mathematical treatment; but those of the second sort still remain unsolved. As he explains the matter, "Zeno's and Kant's dialectic holds good wherever, before an end can be reached, a succession of terms, endless by definition, must needs have been *successively* counted out. This is the case with every process of change, however small; with every event which we conceive as unrolling itself continuously. What is continuous must be divisible *ad infinitum*; and from division to division here you can not proceed by addition (or by what Kant calls the successive synthesis of units) and touch a farther limit. You can indeed define what the limit ought to be, but you can not reach it *by this process.* That Achilles should occupy *in succession* 'all' the points in a

single continuous inch of space, is as inadmissible a conception as that he should count the series of whole numbers 1, 2, 3, 4, etc., to infinity and reach an end" (*Some Problems of Philosophy,* pp. 170–171). In the Achilles "the real difficulty may almost be called physical, for it attends the process of *formation* of the two paths. Moreover, two paths are not needed—that of either runner alone, or even the lapse of empty time, involves the difficulty, which is that of touching a goal when an interval needing to be traversed first keeps permanently reproducing itself and getting in your way" (*ibid.,* pp. 181–182). "But whoso actually *traverses* a continuum, can do so by no process continuous in the mathematical sense. Be it short or long, each point must be occupied in due order of succession; and if the points are necessarily infinite, then their end cannot be reached, for the 'remainder,' in this kind of process, is just what one cannot 'neglect' (*ibid.,* pp. 182–183). "Such an agent is bound by logic to find *always* a remainder, something ever yet to be paid, like the balance on a debt with even the interest of which we do not catch up" (*ibid.,* p. 172). "The criticisms of Leibniz, Kant, Cauchy, Renouvier, Evellin, and others, apply legitimately to all cases of supposedly continuous growth or change. The 'conditions' here have to be fulfilled seriatim; and if the series which they form were endless, its limit, if 'successive synthesis' were the only way of reaching it, could simply not be reached" (*ibid.,* p. 184).

The difficulty which James here has in mind is a difficulty inherent in the *very nature of temporal process as such.* Motion constitutes an irresolvable problem not in so far as it is a question merely of the correlation of an infinitely divisible time with an infinitely divisible distance—*that* difficulty can be disposed of on Russell's lines—but precisely because, and in so far as, motion is one species of temporal process. And the fundamental paradox of temporal process, as it presents itself to James' mind, may, I take it, be stated as follows. No temporal process whatever can ever be completed, for every such process consists of successive stages which must occur in order. The earlier half of the process must occur before the later half, the earlier half of this remaining half before *its* later half, and so on. And no matter how far the process may go forward there will always be at its every stage a remainder which is yet to occur. Consequently, the process will never reach its completion. Otherwise stated, no temporal process can ever reach completion, for in order that it should do so its final segment must sometime occur; this, however, is impossible, for no process possesses any final segment. The final segment of a process would be that segment no part of which occurs until after the completion of every other segment. But the first half of every segment is itself a segment which must be com-

pleted before the whole segment can be completed. Hence there is no segment no part of which occurs until after the completion of every other segment.

In James' version of the matter the paradox of temporal process concerns itself with the question of how such a process can ever complete itself, *i.e.*, how it can ever reach an end. The difficulty which Whitehead finds is essentially the same, but to him it seems to present itself primarily as the question "how a temporal process can ever get started." For him, too, however, the paradox is one affecting temporal process as such. His argument "assumes," as he says, "that Zeno understated his argument. He should have used it against the current notion of time in itself, and not against motion, which involves relations between time and space. For, what becomes has duration. But no duration can become until a former duration (part of the former) has antecedently come into being. . . . The same argument also applies to this smaller duration, and so on. Also the infinite regress of these durations converges to nothing—and even on the Aristotelian view there is no first moment. Accordingly, time would be an irrational notion" (*Science and the Modern World,* p. 180).

The difficulty thus presented appears simply as the obverse of that of James. It might be put as follows. No temporal process whatsoever can ever even begin to occur; for every such process consists of successive stages which must occur in order. The earlier half of the process must occur before the later half, the earlier half of this earlier half before *its* later half, and so on. And no matter how near any stage of the process may be to the beginning, it can not *be* the beginning, for no stage whatsoever can occur until another process (part of itself) shall first have been completed, and whatever stage of a process is later than another is no geniune beginning of that process. Consequently, the process can never make a beginning.

Otherwise stated, no temporal process can ever make a beginning; for in order that it should do so its initial segment must sometime occur. This, however, is impossible, for no process possesses any initial segment. The initial segment of a process would be that segment no part of which occurs after the completion of any other segment. But the later half of every segment is itself a segment which can not occur until after the completion of the earlier half. Hence there is no segment no part of which occurs after the completion of any other segment.

So much for the nature of the problem.

## II

And now for the proposed solution. According to James, in order to avoid the difficulty we have only to abandon the notion of temporal processes as continuous "and to treat real processes of change no longer as being continuous, but as taking place by finite, not infinitesimal, steps, like the successive drops by which a cask of water is filled, when whole drops fall into it at once or nothing" (*op. cit.*, p. 172). For Whitehead the solution is essentially the same. "Temporalisation is not another continuous process. It is an atomic succession" (*op. cit.*, p. 179). "Time is sheer succession of epochal durations. The epochal duration is not realised *via* its *successive* divisible parts, but is given *with* its parts" (*ibid.*, pp. 177–178). The "epochal duration" is also referred to as an "arrest" (*ibid.*, p. 177).

How far does this way of conceiving the matter go toward resolving the difficulty? So far as I can see, it does not help at all. In fact, the conception of temporal processes as taking place by "finite steps" or as a succession of "epochal durations" seems to me either to involve no really new conception at all, or else to be sheerly unintelligible. What one at once wishes to ask concerning such "finite steps" or such "epochal durations" is (1) whether or not they contain proper parts, and (2) whether these proper parts are mutually simultaneous or mutually successive.

Both James and Whitehead would seem to answer the first of these questions in the affirmative, and thus to adopt the usual assumption of divisibility. For James the "finite steps" are likened to "whole drops" of water; they are "drops, buds, steps, or whatever we please to term them, of change, coming wholly when they do come, or coming not at all" (*op. cit.*, p. 185). In calling them "wholes" it thus seems to be implied that they have parts, and this interpretation is borne out by James' characterization of them as "finite not infinitesimal steps." Whitehead, at any rate, unmistakably takes this view of the matter. In calling time "atomic," he does not mean to imply that the "atoms" are simple and uncompounded. "Thus time is atomic (*i.e.*, epochal), though what is temporalised is divisible." "Thus time is the succession of elements in themselves divisible . . ." (*op. cit.*, p. 179). "Time is sheer succession of epochal durations . . . the divisibility and extensiveness is within the given duration" (*ibid.*, p. 177).

As to the second of our questions, however, the position of each of our writers is decidedly difficult to interpret. On the one hand, each "finite step" or "epochal duration" is apparently a case of temporal process, within which, one would suppose, there must be

earlier and later segments. Thus James speaks of steps or buds "*of change*," and a finite step of change would seem to mean a change of finite duration, involving successive process within the step. And Whitehead's "epochal durations" are emphatically durations, "involving a definite lapse of time, and not merely an instantaneous moment." Yet if the parts of a finite step are really to be taken as occurring in succession, then there is no essential novelty in the view at all, the paradox of temporal process breaks out anew within each finite step, and we have made no progress at all towards its solution.

The main point of emphasis, however, both in James and in Whitehead, would appear to be rather upon another way of looking at the matter, according to which the parts of a finite step are not successive, but simultaneous. Thus James tells us that the finite steps come "wholly when they do come" or not at all; they are like "whole drops" of water which fall into the cask "at once." And for Whitehead, too "the epochal duration is not realised *via* its *successive* divisible parts, but is given *with* its parts." This certainly seems to mean that the parts of a duration all occur simultaneously; and thus accords with the characterization of an "epochal duration" as an "arrest."

In terms of this conception, it is held, the paradox of temporal process gets its solution. Temporal process must be viewed as involving a radical discontinuity. "Temporalisation is not another continuous process. It is an atomic succession" (Whitehead, *op. cit.*, p. 179). "Time is sheer succession of epochal durations" (*ibid.*, p. 177). Thus every temporal process is composed of a number of finite steps, one of which is the first and one of which is the last. And thus there is no difficulty in considering either the beginning or the end of the process. For example, the difficulty about the beginning was that "Every part of time involves some smaller part of itself, and so on." Also this series regresses back ultimately to nothing, "since the initial moment is without duration and merely marks the relation of contiguity to an earlier time" (*ibid.*, p. 179). But now in the "epochal duration" we have a genuinely and uniquely *first* step in the process—a step of finite duration, instead of a mere durationless boundary, but at the same time a step within which the paradox can not break out afresh, inasmuch as this step of duration is not realized *via* its successive divisible parts.

But now to my mind this whole notion is radically unintelligible and inconsistent with itself. I fail to understand how a whole, every part of which is simultaneous with every other part, can be properly characterized as a "duration," or can be said to involve "a definite lapse of time." And I fail to see how such a view is

compatible with the passage from Kant with which Whitehead (*op. cit.*, pp. 178–179) expresses "complete agreement": "Time and space are quanta continua, because there is no part of them that . . . is not again a space or a time. Space consists of spaces only, time of times." Time, Whitehead holds, involves parts occurring in succession. If each of these parts is again also a time, it, too, must involve parts occurring in succession. But this is precisely what Whitehead denies. Is the notion of a "duration" within which nothing is earlier and nothing later really intelligible?

## III

But let us now proceed to ask whether such heroic measures are really necessary after all. May it not be that the "paradox of temporal process" is capable of solution on more traditional lines? Such I believe to be the case.

First as to James' difficulty with regard to the completion of a temporal process. The difficulty consists essentially in the alleged impossibility of completing a whole by successive synthesis of its fractional parts in the order ½, ¼, ⅛, 1/16, etc. The completion of the whole is the *limit* which the successive synthesis of parts is always approaching, but which it apparently can never reach.

Now it is, of course, true that there is no last fractional part in this series of parts, the addition of which to the others will at last complete the process. But does it therefore follow that these parts will never all get added each to each, or even that this totality will never reach completion in any finite time? Not in the least, so far as I can see. But, it will be said, there are an infinite number of these fractional parts, and for them all to be added each to each and one after the other would obviously take forever. Not so, I reply. This process of successive synthesis would, indeed, take forever to complete itself, if we were to assume that the addition of each fractional increment to the preceding must take not less than a certain definite minimum of duration. But it must be pointed out that such an assumption would be wholly arbitrary, and by no means necessarily demanded by the nature of temporal process as such. A process is perfectly conceivable, for example, such that at each stage of the process the addition of the next increment in the series ½, ¼, ⅛, etc., should take just half as long as the addition of the previous increment. But if the addition of each increment is itself, at each successive stage, a process of less and less duration, and if this lessening proceed without limit, then the addition of all the increments each to each shows no sign whatever of taking forever. On the contrary, it becomes evident that it will all be accomplished within a certain definitely limited duration.

The reason why we tend on occasion to overlook this aspect of the matter appears to me to be that we are very strongly inclined to view the addition each to each of the successive increments of a temporal process as though it were strictly and fully analogous to the process involved in our attempting to enumerate in order one after the other all the members of the numerical series ½, ¼, ⅛, etc. Such a process of enumeration would, for us human beings, indeed, take forever. But this is merely because any act by means of which we human beings can enumerate a series of terms is inevitably of a sort which we are incapable of performing in less than a certain minimum finite time. Each act of articulation, for example, will require not less than a certain mimimum finite duration for its accomplishment; and to complete one after the other an infinite number of acts of articulation, none of which sinks below a certain definite mimimum of duration would, indeed, take forever. The completion of a temporal process by successive synthesis of its ½, ¼, ⅛, etc., however, by no means involves this difficulty. It is analogous rather to a process of enumeration in which each successive act of articulation should take just one half as long as that next preceding it. The enumeration of an infinite series by *such* a succession of acts of articulation would obviously by no means take forever, but would, on the contrary, all be accomplished within a certain definitely limited period. If, *e.g.*, the first act of articulation takes ½ second, the next ¼ second, etc., the enumeration in order of each of the members of the infinite series will all be accomplished in precisely one second.

But, it will hereupon doubtless be said, the central point of the difficulty has not really yet been touched at all. The completion of a whole by successive synthesis of its fractional parts in the order ½, ¼, ⅛, etc., is a process which by its very nature simply *can not* come to an end, for no matter how far it may continue, no one of these increments will be the genuinely last and final increment. At every stage of the process, therefore, there will inevitably remain an increment still to be added before the whole process is completed. I can not help thinking, however, that this way of putting the matter is, after all, more specious than sound. It is, of course, true that at every stage of the process, *i.e.*, so long as the process is still going on and is not yet finished, there will inevitably remain an increment still to be added before the process can reach its end. This is, indeed, a mere tautology. So long as a process is still going on it is, of course, not yet completed. At every stage within the process, and so long as the process continues, there remains something yet to be accomplished. But I quite fail to see how from this obvious fact it follows either that the successive fractional parts of our whole process

can not all add themselves each to each and one after the other, or that this synthesis will never be completed, or that it will take forever to complete it. If the first half of the total process takes one half minute, for example, the next quarter ¼ minute, etc., the entire process will, on the contrary, quite plainly take just one minute.

In fact, a process which is composed of a definite and uniquely definable earlier and later half, or of successive quarters, eighths, or the like, must evidently, as a whole, possess no more than a finite duration. A process of infinite duration is not thus composed. Not only is it not true that a process realized by successive fractional increments in the order ½, ¼, ⅛, etc., must last forever, or can never come to an end; it is positively impossible that such a process should be of infinite duration, for a process of truly infinite duration can not be regarded as consisting of *such* a series of fractional increments at all.

But it may still be said, *How can* a process that can have no last increment have an end? Of course, it must be admitted, as we have seen, that *in one sense* a temporal process can, indeed, have no end. But that is very different from admitting that it will never get completed, or that it will last forever. It will get completed when all the increments have been added each to each; and it can plainly be seen that this will all be accomplished within a definite finite time. The last instant of that time (whether instants be defined by "extensive abstraction" or otherwise) is in one perfectly legitimate sense the "end" of the process. It seems sometimes to be supposed that the only sense in which a process can be said to have an end is the sense which identifies an end with a final increment. But its "end" may equally well be considered, not as a last constituent event, but rather as the bounding instant before which the process is still going on and after which it is no longer going on.

Moreover, even in the sense in which "end" is identified with a last constituent event, every process has an end. There is, indeed, no last event in the series of fractional increments ½, ¼, ⅛, etc. But there *is* a last constituent event in the series of fractional increments ⅛, ⅛, ⅛, etc., and in every other similar series of increments. And the process is realized *via* this series of successive parts as well as *via* any other set. In fact, whatever stage the process has reached, the "remainder," of which James speaks, will itself always be a segment of the process which as a whole will include all later segments as parts. It may therefore itself quite legitimately be called the *last segment* of the process—*i.e.*, there is no segment that occurs after it has finished. Such a segment includes at every point "all the rest"; and what includes "all the remainder," is the "end."

If, finally, after all such explanations and qualifications, it should

still be asserted that a temporal process, in view merely of the fact that in one highly peculiar sense of the word it "can have no end," can therefore in *no* sense of the word "come to an end," or that it can not get completed, or that to complete it would take foreover, I should be able to regard such an assertion only as a bit of perfectly gratuitous and wholly ungrounded dogmatism. *Why,* I ask, can such a process not get completed? I fail to see any reason for thinking that it can not. If you ask me *when* it gets completed, I can reply, precisely, "when all the increments have been added each to each"; and in any concrete case, if I know the rate at which the process is proceeding, I can specify just when this will be. If you ask me *how* it gets completed, I answer, "precisely as described, namely, *via* the successive synthesis of its parts." I wholly fail to see that any intelligible question remains to be answered.

If we hereupon turn to Professor Whitehead's corresponding difficulty about the *beginning* of a temporal process, the nature of our solution will doubtless in general already be clear. In one sense it, of course, remains true that no temporal process can have a "beginning," *i.e.,* in the sense that there is no first increment in the series . . . $\frac{1}{16}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$. And yet it is *via* this series of successive increments, among others, that the process must be realized. But because in this sense the process can have no beginning it by no means follows that in *no* sense can it have a beginning; still less that once going on, it must have already have been going on from all eternity. In fact it *can not* have been going on forever, for, as was pointed out above, no process of infinite duration is composed of sixteenths, eighths, fourths, and the like. Moreover, the process, in at least two perfectly legitimate senses of the term, *does* have a beginning, after all. In the first place, its "beginning" may quite well be considered, not as a first constituent event at all, but rather as the bounding instant before which the process was not yet going on and between which and any subsequent instant it has already been going on. And, in the second place, even in the sense in which the "beginning" of a process is identified with a first constituent event, every process will have a beginning. For its first sixteenth, its first eighth, etc., will each of them be a first segment in the series to which it belongs. In fact, any segment which contains within itself all earlier segments will in this sense be a first. There will be no segment of the process that occurred before all the parts of this segment, and it will, therefore, be in this sense itself the "beginning" of the process.

If, hereupon, it still be asserted that in view solely of the fact that in one highly peculiar sense of the word a temporal process can "have no beginning," it can therefore in *no* sense of the word have

a beginning, or that it can therefore not occur, such an assertion again appeals to me as simply a bit of ungrounded dogmatism. *Why*, I ask, can a process, in one sense of the term without any beginning, nevertheless not actually occur? If you ask "*When* does it begin?" I answer, "from the instant that marks its initial boundary." If you ask, "*How* does it get started?" I reply, "precisely as described, namely, by the occurrence of a part of it which is earliest of some set of fractional parts, but which itself contains various sets of fractional parts within each of which sets some members of the set are earlier than others, and within some of which sets one member is earliest, while within some of the sets no member is earliest." And again I fail to see any intelligible question remaining.

R. M. BLAKE.

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## BEAUTY AND RELIGION

THE mind of the American novelist, Theodore Dreiser, is torn by the often conflicting demands of beauty, goodness, and truth. Because he has tried to do justice to all three he has offended the puritans of the vinegar-visaged type and the ineffectual esthetes as well. On the other hand, he has been overpraised by his realistic colleagues. The student of contemporary science will see that these apostles of disillusionment are dominated by the scientific traditions of Darwin, Huxley, Tyndall, and Spencer, rather than by the dawn-gleams of Lloyd Morgan, William Patten, Thomas Hunt Morgan, Rutherford, Bragg, and Millikan.

The nucleus of Mr. Dreiser's view of nature lies bare in that powerful passage in *The Financier* which describes a boy's feverish meditations over "the struggle for existence" as staged in a tank in front of a fish-market which he passed by daily. "The lobster lay at the bottom of the clear glass tank on the yellow sand, apparently seeing nothing—you could not tell in which way his beady black buttons of eyes were looking—but apparently they were never off the body of the squid." After days of suspense the boy rushed to the tank just too late to see the end, but in time to hear the comments of more than one bystander, adult but no less boyishly bewildered than he. "It answered in a rough way that riddle which had been annoying him so much in the past: 'How is life organized?' Things lived on each other—that was it."

There is plentiful evidence in *A Book about Myself* and in an article hardly more than a year old in *The American Mercury* that Mr. Dreiser himself continues to share young Cowperwood's point

of view. As a truth-lover he is too reverent of whatever facts he has chanced to find to turn from them to the contemplation of beauty hothoused from the winds and snows. Not so Conrad Aiken, one of America's distinctive contemporary poets. In an article in *The New Republic* for April 11, 1923, Mr. Aiken justly condemned the literary adjudicators and impressionists for their evasions concerning the nature of beauty and proposed an unequivocal esthetics as "A Basis for Criticism." Like Dreiser, he finds the universe a sorry place. But, unlike Dreiser, reality does not interest him. Because of "the restrictions of every kind that hem us in," he turns to beauty, the "very essence" of which he conceives to be "illusion." Alas for us, "we come into the world confident of omnipotence," but "daily our power dwindles." Mr. Aiken then defines beauty formally as "the profound satisfaction we feel when, through the medium of fantasy, we escape from imposed limitations into an aggrandized personality and a harmonized universe."

Let us enlist psychology to correct both the common-sense definition of beauty (which helplessly makes it an indefinable quality in objects independent of ourselves) and Mr. Aiken's swing to a hopelessly subjective extreme. Psychology divides experience into three closely linked phases, cognition (perceiving or identifying objects), affection (vague feelings or definite emotions pleasant or unpleasant), and conation (strivings, movements which range from the all but imperceptible strains of eyeball muscles, the tonicity of the muscles of the torso, sub-vocal tensions in the larynx, general bodily postures, variations of respiration, to eating, fighting, fleeing, embracing, dancing). Obviously cognition, affection, and conation must all be constituents of every mental experience. But a growing number of students of values esthetic, ethical, and utilitarian, are convinced that the valuing aspect of experience is its conative-affective portion. Thanks to James, Lange, Sutherland, and others, we have come to say that we see and identify a bear (cognition), we start to flee or hide ourselves or stiffen into immobility like an insect "feigning death" (conation), then a massive reverberation flows back from muscles to glands, blood-vessels, heart, and brain (the affect or emotion), and thus fear lends us wings or paralyzes us (reinforced conation).

Now when an object is beautiful it arouses unique conations which may be called empathy (einfühlung) in justifiable defiance of the etymology which suggests emotions or feelings rather than the movements of the external parts of our bodies. These empathic conations are movements by virtue of which we tend to identify ourselves with an object, to become at least metaphorically one with it. Thus empathy differs from sympathy, which recognizes keenly our separa-

tion from the object which we feel *with*. Empathy may be imitative, as when before a Doric pillar we stand comfortably erect. Or it may in no manner mimic the object, as when the muscles of the eyeball twist the lens in zigzag lines leaping athwart the curves of an urn to sweep in the salient features, not langorously following the outline. Or again empathic conations may expand into a dance, either pantomimic and so imitative, or ecstatic and so not imitative at all. To the conception of the advocates of this revised and behavioristic theory of empathy we may weld the theory of "sentiments." As the empathic conations begin, our organisms are flooded by a symphonic reverberation of several emotions, perhaps two, perhaps eight or ten, perhaps synchronous, perhaps in rapid succession, but always centering about the emotion of love in the most primitive and the most inclusive sense of the word. This "sentiment," as Professor McDougall would call it, reinforces our empathic conations until verily we have lost ourselves to save ourselves in our delighted non-possessive contemplation of the object. Now the object, to arouse such a complicated response, must have a more or less complicated arrangement of details, a form which unifies without annihilating the variety; or we must perceptually select from the chaotic details of our object a pattern which will inspire us to identify ourselves with it. Beauty is neither a quality in the object nor in the fantasy of the beholder. Like all values it is a relation. Beauty is our marriage with the object which we call beautiful. An object is beautiful when it has form in actuality or potentiality and when it arouses in us a sentiment which centers in love and when it arouses the unique conations called empathy. And when that object is such a comprehensive substance or process in nature that we may with William James cry out, "All is not vanity in the universe whatever the appearances may suggest," then our esthetic contemplation, not merely reposeful nor militant, but a delicate blend of both, is the attitude which has always been the goal of mysticism confirmed and reconfirmed in all religions before they fall prey to the letter.

But is the marriage called beauty made in heaven? Does beauty rebelliously falsify a tyrant nature as Conrad Aiken thinks? Is the fundamental tendency of reality, as Theodore Dreiser infers, ruthlessly competitive, engendering fear, hate, avarice, or at best pity among a few enlightened and stoical spectators?

Does the fable of the lobster and the squid sum up the most fundamental of the evolutionary tendencies? Far be it from scientist, artist, or religious seer to make light of the reality and ubiquity of evils. Competition, repulsion, fear, suspicion, anger, jealousy, greed, and hatred flourish among men and have their foreshadowings

throughout the length and breadth of nature. Even electrons act at times as if they were stirred by motives not dissimilar. Let us never forget all this. But to the contemporary investigator of organic evolution competition does not appear to be the most fundamental tendency. According to Thomas Hunt Morgan in his *Critique of the Theory of Evolution,* Mendel's researches have led us to a view which differs "somewhat . . . from the old idea of a ferocious struggle between the individuals of a species . . . Evolution assumes a more peaceful aspect. New advantageous" characteristics, qualities, or trends "survive by incorporating themselves into the race, improving it and opening to it new opportunities." William Patten, in *The Grand Strategy of Evolution,* does not hestitate to describe both organic and inorganic evolution as fundamentally more cooperative than competitive. "Progressive union and stability, progressive coöperation, organization, service and discipline are . . . inherent properties of life and matter. . . . Light and gravity, vitality, genes and gemules, heredity, intelligence, 'selection,' social contact, and all the rest of the growth-machinery of life portrayed by the physicists and biologists may be regarded as local, or special manifestations of a common creative agency."

In extending his interpretation of living things to include nonliving has our second biological authority turned myth-maker? No. To the physicist who deals with the most minute particles of inorganic as well as organic matter, the atoms and their constituent electrons and protons clearly attract each other more or less. There is also repulsion. Atoms are not to be coerced into molecular organization. They have their autonomy. But atoms are not to be found alone, nor electrons, except at most for the briefest of periods when they are travelling at marvellous velocities which are soon tempered by friction. Fearful of anthropomorphism, Frederick Soddy would call these tendencies "tractation" and "pellation." But a rose by any name smells as sweet and evil called error is just as tragic. Science has done well to discipline us against reading our own feelings into objects. But science has never proved that the animist is wholly wrong as well as naïve. What if in its zeal to save us from anthropomorphism science should one day blind us to those similarities which, indeed, Haeckel did find in atoms and lovers and poets? But science is too cautious ever to go blindly astray in a perverse anti-anthropomorphism. In fact, one chemist and biologist, Lawrence J. Henderson, has been of late arguing somewhat for a "biocentric universe," wherein the material environment adapts itself to living things no less surely than living matter adapts itself to its inorganic milieu. In *Concerning the Nature of Things* by the eminent physicist, Sir William Bragg, we may read of astonishingly subtle

reciprocities and sharings of atoms. The chlorine atom, because it has seven planetary electrons in its outermost shell or ring, seeks to add another, while sodium, since it has but one in the same ring, is careless of it. Now all atoms in their normal state contain a perfect balance of positively-charged protons and negatively-charged electrons. Consequently, when chlorine secures this extra electron it is negatively charged and presumably more restless than ever, while sodium, now minus its one straying outermost electron, has become positively charged. But if the negatively-charged chlorine atom and the positively-charged sodium atom enter into relations as a molecule of everyday table salt, that molecule has as a whole the normal balance of electrons and protons. Sodium has easily renounced one electron and chlorine has no longer those restless properties which make it so poisonous to man. Atoms do not combine indiscriminately, to be sure. It is not easy to coerce them. But they do not brook loneliness. "Besides this give-and-take arrangement" which characterizes chlorine, sodium, and various other kinds of atoms, "there is another method," writes Bragg, "by which atoms seek to complete their external groups; they may share electrons with one another, each being capable, apparently, of counting them in its own structure. . . . In the diamond . . . each carbon atom is surrounded by further carbon atoms, with each of which it shares two electrons. So each carbon atom is provided with an external shell of eight electrons none of which it has to itself. This kind of combination is very strong." We must not forget the many atomic and molecular repulsions and the struggles between atomic velocities and gravitational pulls when these particles are in liquid or gaseous states. But atoms and molecules do not remain alone. Attraction, then, is fundamental. It is not a wild fancy to envisage the universe as saturated with an immanent love, not necessarily omnipotent, but slowly prevailing. And we have spoken of love as the central emotion of the esthetic sentiment. And those empathic conations that merge the art-lover with the masterpiece he enjoys or the artist with the piece of nature which he refashions, those movements of the orchestral conductor which unite him with the symphony which he interprets and with the audience who listens, are not all such empathic conations, a search for those movements in nature which eventuate in unions and free associations?

Moreover, when we think of molecules drawing together towards the solid state in those intricate and lovely patterns which we know as crystals in snow-flake and salt and diamond and Damascus blade, we see that in microcosmic activities, as well as in the macrocosmic making of solar systems, nature is everywhere engaged in form-making. In a crystal, as Bragg tells us, "the molecules lie side by

side in an *ordered array*. The point is of fundamental importance. Order and regularity are the consequence of the complete fulfillment of the attractions which the atoms or molecules exert upon one another. When the structure has grown to a size which renders it visible in the microscope, or even to the naked eye, the regularity is manifest in the form of a solid body: it is what we call a crystal. It is bounded by a number of plane faces often highly polished in appearance, so that the crystal has a certain charm due partly to glitter and sparkle, partly to perfect regularity of outline. We feel that some mystery and beauty must underlie the characteristics that please us, and indeed that is the case.'' The staggering versatility of living things in evolving further this fundamental form-making tendency in simple cells, in the segmentation of ova, in skin and nerve and muscle and bone tissues and in shells, has received panoramic treatment, mathematical and biological, in D'Arcy Wentworth Thompson's *Growth and Form,* wherein the author is led to the reflection that ''the biologist, as well as the philosopher, learns to recognize that the whole is not merely the sum of its parts. It is this and much more than this. For it is not a bundle of parts but an organization of parts in their mutual arrangement, fitting with one another in what Aristotle calls 'a single and indivisible principle of unity.' '' The artist who makes still more complicated forms and the beauty-lover who remakes them in enjoying them are not therefore indulging in esoteric and exotic practices. Art is not wholly artificial; it is fundamentally natural. Would that both the complacent philistine and the pejoristic or pessimistic artist could appreciate this! No wonder we lack a Virgil, a Dante, a Gœthe, a Dostoyevsky when men of letters describe beauty as essentially illusion and leave it to Mr. Thompson to write like this: ''The harmony of the world is made manifest in Form and Number. . . . A greater than Verhaeren had this in mind when he told of 'the golden compasses, prepared in God's eternal store.' A greater than Milton had magnified the theme and glorified Him 'who sitteth upon the circle of the earth,' saying: 'He measureth the waters in the hollow of his hand, he meteth out the heavens with his span, he comprehendeth the dust of the earth in a measure.' ''

Long ago Aristotle associated forms somehow with souls. And today certain biologists, psychologists, and philosophers are recalling his phrases as they turn from the warped solutions of materialists, spiritualists, and extreme dualists, which from Descartes on have made the study of mind-matter and mind-body problems so unprogressive. Aristotle, however, was not quite so headlong as some of his twentieth-century followers. He seems, at times, to speak of the soul as form and no more, as the impression on the wax to the

wax itself, as vision to the eye. But for him the soul seems also to be a sort of vital principle making matter into individual things. To have form, he thought, matter must fulfill its purpose. Is soul nothing but form in some external sense, mere outline, or is there something immanent in individuals and in the universe at large? In either case it seems likely that our position would not be remote from either Aristotle or modern science if we declared to philistine, to esthete, to literary realist, and literary naturalist that the experience of beauty which makes and enjoys forms is no bizarre and parasitic supererogation, but a normal extension of that soul-making tendency throughout nature which is driven by love to reorganize the haphazard bombardments of gaseous particles torn by their conflict between movement and mutual attraction, to transform the vast and tenuous nebulæ into rhythmical solar-systems, and to lure the groping unicellular organisms from vaguely engulfing each other to conjugate, to cling together, to form tissues and organs, of which the culmination is the nervous system, making possible for man the life of reason. And while the literary men are still dominated by the outposts of Huxley's nineteenth-century vision, the reverent but forward-looking pupil of Huxley, Lloyd Morgan, brings together his lifelong biological, psychological, and philosophical researches in *Emergent Evolution,* wherein he writes of the universe as a pyramid near the base of which "is a swarm of atoms with relational structure. . . . Above this level, atoms combine to form new units," molecules, while "higher up, on one line of advance, are, let us say, crystals wherein atoms and molecules are grouped in new relations of which the expression is the crystalline form; on another line of advance are organisms with a different kind of natural relations which give the quality of vitality" and so evolve with still higher "emergences" of new powers to give us human personalities. "Within us if anywhere," reflects Morgan, "we must feel the urge," the activity, the "Nisus" which we can see saturating everything else. "What then does it feel like? Each must answer for himself, fully realizing that he may misinterpret the evidence. Without denying a felt push from the lower levels of one's being—a so-called driving force welling up from below—to me it feels like a drawing upwards through Activity existent at a higher level than that to which I have attained." And this faithful and rigorous scientist-philosopher, who as a youth was sent on to this research by the agnostic Huxley with a magnanimous benediction, this pupil loyal not to the letter, but to the spirit of his eminent master, has come to feel that the Nisus in nature which wells up from below and draws us from above must be recognized as God. A nisus, says the dictionary, is a "conative state." And what are those empathic

conations in the experience of beauty by which we seek to become one with the object we contemplate unless they are the rhythmic tendency to bring our energies into harmony with God's ways?

Aristotle conceived of the soul as the form or form-maker which individualizes matter and gives it existence. Individuality has seemed always difficult to define. But a survey of the various attempts now available and the influence of the evolutionary point of view would lead us, perhaps, to conclude that everywhere individuality is more a matter of degree than of absolute attainment and that in their evolution beings seek to attain and to reconcile (1) indivisibility, (2) integration or unity and diversity, (3) uniqueness or variability, and (4) permanence. Electrons and protons (if they are the simplest of things and if we know them at all) are indivisible and permanent. But they are hardly unique, because all electrons are like electrons and all protons are like all protons. And since both are perhaps nothing but ether-vortices, one turning one way, the other the reverse, they are too simple to claim integration. When they join together as atoms they attain integration, for their nuclei and electron-rings present unity and variety. And they gain in uniqueness; there are some ninety-two different kinds of atoms or "elements." But indivisibility and permanence have to some extent been sacrificed as radioactivity reveals. *We* can not divide them. But at times they explode. At the molecular stage there are further gains in integration and uniqueness. There are chain structures and ring structures and protein molecules of hundreds of atoms. And there are subtle variabilities, as in the case of diverse activities of ether and of ethyl alcohol molecules, which are made of the same kinds and proportions of atoms, but which are so arranged that they are very different substances. But molecules are more divisible than ever. Even a human chemist can break them down. And in nature they are often very evanescent. In the living unicellular creature there are vast gains in integration, considerable recovery of permanence, but no marked recovery of indivisibility and no striking gain in variability. In multicellular organisms there is a progressive gain in indivisibility until man will part readily with little more than with bits of his skin. But there is some loss of permanence. Integration grows more elaborate by leaps and bounds and variability becomes incalculably great. We find the integration of nervous systems. We behold the variability of geniuses. Sometimes integration seems to overlap itself, as in the crustacean, in whom the muscular segments are so united within an external shell as to make him sluggish. Now motility, exploration of environment, is a great source of uniqueness. So it is not surprising that when the vertebrates so developed their bony structures as not to impede their

muscular versatility there was an immense recovery of variability due almost as much to motility as to a highly evolved nervous system. The development of sex, too, with its sorting and resorting and blending of diverse germ-plasms, lends itself powerfully to uniqueness. With the emergence of the mammals life became mindful of permanence and the suckling of the young broadened into an even more elaborate prolongation of infancy and the triumph of the ideal of education. With this recovery of permanence, at least as an ideal, man has come at last to dream of immortality and perchance actually does survive death if he is loyal enough to the great task of form-making and form-enjoying. Such a survival may be more than the mere survival of influence. It may be a strictly personal survival in what Josiah Royce loved to call the "beloved Community." Thus individuality, which needs indivisibility, integration, uniqueness, and permanence, appears to evolve, sometimes at the cost of one essential, sometimes at the cost of another, but cumulatively on the whole towards a realization and increase of all four properties. And since with each new level new and unpredictable powers have emerged (if we are to believe a growing number of scientists and philosophers who in some measure share the views of Lloyd Morgan) so man the artist, when dominated by empathy and a sentiment which centers in love, seems in his form-making to have reached the farthest-flung frontiers of evolution, mindful of the ways of God and attaining with a steadily emerging freedom to a new power which is a continuance into eternity of form-making and form-enjoying, the power of immortality.

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## BOOK REVIEWS

*University of California Publications in Philosophy;* Vol. VII (1925). Studies in the Problem of Norms. GEORGE P. ADAMS, J. LOEWENBERG, STEPHEN PEPPER, editors. Berkeley: University of California Press. 207 pp.

Collectively, the papers in this new volume of University of California Publications in Philosophy indicate the continuous productivity of members of that university's Philosophical Union and their abiding interest in problems of value-philosophy. Individually, the papers indicate that the fundamental divisions and methods of approach of value-philosophy are still undetermined. Four of the papers discuss norms from as many different standpoints—meta-

physical, logical, psychological, and epistemological—but they give no impression of systematized knowledge; each author apparently believes that the chief question about norms lies in the field of his choice. This observation is a matter of fact rather than of criticism. Value-philosophy is still in its adolescence.

In opposition to the view that value depends upon preference, and is therefore not susceptible of rational control, Mr. Adams distinguishes between the process of preferring and the quality, content, or meaning, which is the object of the act of preferring. Value, on his hypothesis, is characteristic of systems of qualities, and different kinds of preference are correlated with different qualitative fields. Mr. Adams believes that these fields exhibit structures which, as we note them in the historical growth of our valuation and appreciation, suggest order, continuity, linkage, and connections. These systematic features testify to the operation of norms in fields which may be relatively independent. Each field, whether economic, esthetic, religious, moral, or scientific, "may be said to possess its own logic, and consequently to exercise its own type of constraint." Although he maintains that an analysis of the norms involved could be made in relative independence of any metaphysics, he suggests the hypothesis that experience is a selection from, and a discovery of, a world richer than its own content.

Before the separate logics have been formulated systematically, it would be premature to venture criticism. One may predict, however, a large crop of antinomies, as numerous as the conflicts among our different interests.

In his paper, "Naturalism and Norms," Mr. Prall expounds a view of norms that is radically different from that of Mr. Adams. For Prall the only genuine norms are logical in the narrower sense. Ethical norms are classified as esthetic (the good) or logical (the right). The subjective character of esthetic norms prevents them from being "perfectly general." Prall's analysis of logical norms is made in the terminology of W. E. Johnson's logic. Norms are relational determinables whose meanings are exhausted in their determinates. Truth is the most general norm, and logical principles are truth in its first approximation to determinateness. In keeping with his nominalistic account, Prall denies that norms exercise any constraint; he holds the naturalistic view that there are no final causes and that the only efficient causes are factual events. He illustrates the meaning of a relational determinable by considering the term "parallelism." The term is a *relational* determinable because its determinates characterize more than one term. The edge of a desk can not be said to be parallel without referring to another edge. One may experience either edge alone, but the meaning of

parallelism is understood only in reference to two experiences. The general relation implicit in the relational determinable "truth" is that of "characterizing the characterized." A determinate instance would be a case where a proposition characterizes a factual event.

Space does not permit a detailed criticism of Mr. Prall's thesis. Two points may be noted. If truth is a relational determinable, under which true statements are determinates, it should be possible to exhibit each of the terms of the relation separately. The pragmatists have familiarized us with propositions that are "candidates for truth," but it is not easy to contemplate factual events apart from their truth-claim. To perceive a floating flag is tantamount to asserting its factual character. To suppose that truth supervenes when I bring together the proposition "The flag floats" and the perceptual experience is more difficult than to regard truth as a logical identity between the meaning of a judgment and a part of reality. Again, Prall holds that truth is independent of a knowing subject because its constitutive relation does not involve a subject as one of its terms. If this position be interpreted literally, it would seem to point to a subsistent world of propositions which characterize reality. Such a violation of the law of parsimony would not occur under the hypothesis of logical identity.

Mr. Pepper, in his paper on "Standard Value," endeavors to eliminate from his account of value everything that savors of "mere" description. We are asked to restrict ourselves to the concrete facts of patterns in action. Immediate and standard values are different aspects of acts. The reviewer understands Mr. Pepper to argue that, since descriptive knowledge is subsequent to immediate knowledge in the order of knowing, it can not be logically prior to immediate knowledge. This seems to be a patent fallacy.

Immediate value is held to be "the dynamics of patterns." The object valued is the pattern itself. Pepper's discussion confuses two different views of the nature of immediate value. Sixteen years ago Perry stated the principle that "the attitude of interest either constitutes values or it cognizes them."[1] Pepper's definition of immediate value as "the dynamics of patterns" takes interest to constitute values. Later, however, in describing how standard value grows out of immediate value, when one pattern comes to serve as the standard of comparison for another, he distinguishes immediate value in terms of the object valued, *i.e.*, in terms of what is cognized in the act. The reviewer believes that confusion can be avoided only by recognizing the distinction between immediate value and immediate worth.

Mr. Pepper regards norms as descriptive patterns which form

[1] This JOURNAL, Vol. XI, p. 152.

the limits of quantitative series derived from successive discriminations within patterns. The sense of external control guiding the direction of the successive revisions is not to be identified with the limit. There are no final causes.

In a footnote (p. 141), Mr. Loewenberg suggests as a subtitle of his paper, "Is Metaphysics Descriptive or Normative?", "The Contrast in Alexander's Philosophy between Reality and Truth." Alexander holds that cognition occurs immediately when a mind is compresent with a thing, but that truth belongs to propositions which are found to be coherent after being tested by "the clash of minds" (p. 159). Loewenberg attempts to demonstrate the logical inconsistency of this position by forcing Alexander into a dilemma. He emphasizes Alexander's statement that cognition is only one instance among others of the relation of compresence. "Cognition, though it is a relation one of whose terms is mind, is *qua* relation independent of mind, as independent as reality itself, the other term of the relation" (p. 158). On this view cognition belongs to reality, and is neither true nor false. Truth, on the other hand, being a creation of minds and subject to standards, is mediate, and has no "sure grasp" of the real. "*Either* the cognitive relation belongs to reality *or* it belongs to truth. If it belongs to reality, it cannot be true; and if it belongs to truth, it cannot be real" (p. 163). Metaphysics must be either descriptive or normative; it can not be both. Loewenberg himself holds that "knowledge of reality means knowledge of it by mind" (p. 176), and he believes that this position is compatible with the realistic principle that *esse* is independent of *percipi*, and that the transcendence of reality follows as a corollary. He says that "our consolation must be that in thus linking metaphysics with the norms of the mind we leave the way open for skepticism, not of reality, but of knowledge, where skepticism rightly belongs" (p. 180).

The conclusions that all knowing is mediate and that reality is transcendent to knowledge may be reached by a number of arguments. Here it is in point to discuss only the argument used by Loewenberg. It seems to the reviewer that he has cut his dilemma by shearing Alexander's argument at both ends. On the side of cognition (in connection with which Alexander uses the terms "apprehending" and "contemplating"), although Alexander says that cognition is, *qua* relation, a case of compresence like any other togetherness, and so not unique, yet it must not be forgotten—and Alexander never forgets—that cognition differs from other cases of compresence by having a mind for one of its terms. All cases of cognition are cases of compresence, but not all cases of compresence have a mind for

one of their terms. To describe Alexander's position as one "where knowing is held to be pervasive, extending to all compresent existences" (p. 168) is a fallacy of false conversion.

On the other hand, Loewenberg does not allow to Alexander all the benefit of his full theory of truth and error. He postulates that coherence of judgments and standardization by minds are ideal ends, in the sense of being unrealized possessions and mental constructions (pp. 160–161). Alexander could reply by referring to his theory of degrees of perfection. He points out that later truth about the same kind of subject, and fuller and more comprehensive truth, "make the reality and its correspondent truth more perfect, but do not affect its intrinsic reality or truth."[2] He believes that eternality of known truth and progress in knowledge are not incompatible.

In a temperate manner Mr. Parker discusses the limitations of the harmony principle in ethics. Difficulties beset him who would harmonize divergent interests. An unsatisfied interest creates disharmony among those interests that are satisfied. "So highly unified is man that he can satisfy no one of his interests completely unless he satisfies them all" (p. 116). This fact would seem to demand harmonization of interests as the necessary condition of happiness. But there are various planes of values giving rise to many antagonisms which hinder harmony. Moreover, the full value of any activity or function can be realized only in isolation. Again, sublimation is only partial, and integration involves sacrifice. Parker emphasizes the need of a certain independence and free play of the elements of experience, and finds a consolation in the joy that comes with the discovery of new interests and the victory of new harmonies.

Two papers of the volume deal with more special problems. Mr. Lenzen, discussing regulative principles in physics, distinguishes between material principles, normal but subject to empirical control, and formal principles, grounded in the nature of reason. In connection with the former, of which continuity and causality are taken as types, Lenzen observes that the principle of efficient causality is supplemented in certain cases, as in the principle of least causes and in the Bohr theory of the atom, by the principle of final causality. In the field of formal causes he rejects the principles of economy and simplicity in favor of that of unity, which is said to have three moments, generality, objectivity, and stability. The faith of the physicist appears in his statements that physics' aim is to make its system objective for all observers, and that the truth of earlier systems has been preserved in that of later ones.

Mr. Lenzen's and Mr. Loewenberg's papers afford a contrast between faith and skepticism in cosmological investigation. Lenzen

[2] Alexander, *Space, Time and Deity*, Vol. II, p. 265.

believes that experience may be described by concepts that represent sense-data and refer to an external world, and that theories, although they are built upon conventional definitions which are chosen somewhat arbitrarily, yet "represent the facts" (p. 36). Loewenberg holds that since knowledge is mediate, true knowledge is specious knowledge, remote from reality. He believes that a descriptive metaphysics is an ideal activity conditioned by the mental norms which control true knowing. Lenzen believes that every system of knowledge must be self-consistent, a formal condition, and true, a material condition. Truth means to "express the nature of the external world" (p. 39). The ideal of physics is dual, "to build structures which harmonize with experience, but which also embody ideals of form" (p. 50). Loewenberg holds that truth *is* consistency, not a material condition of knowledge. He thinks that the ideal of real knowledge is doomed because truth is human, while reality is cosmic.

Appended to the lectures delivered before the Philosophical Union is the third annual Howison Lecture delivered by Professor Montague. Adequate discussion of this paper is beyond the scope of this review as well as beyond the ability of the reviewer. Writing on "Time and the Fourth Dimension," Montague asks us to "cease to take pride in adducing proofs for the unprovable" and "devote our principal energies to the dreaming of dreams and the building of cities in the sky" (p. 184). There follows, however, an argument, characteristically tightly woven, which seeks to remove the contrasts between space and time by the hypothesis that time is a fourth spacial dimension through which the universe is moving. Our three-dimensional space system is conceived as the surface of a four-dimensional hypersphere which expands uniformly, its expansion appearing to us as the flow of time. "On the smooth surface or ether of this cosmic bubble there are little hills and holes, protuberances and depressions whose behavior in relation to one another would seem to resemble the electric magnetic and mechanical behavior of the protons and electrons that make up the actual world of matter" (p. 207). This hypothesis is linked with Montague's important theory that mind is a form of potential energy.

The proof-reading of the volume is poor. The reviewer noted thirty-two typographical errors.

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*The Life of Solitude.* FRANCIS PETRARCH. Translated with an Introduction and Notes by JACOB ZEITLIN. Urbana: University of Illinois Press. 1924. 316 pp.

This is a beautifully made, substantial, and forbidding volume. Except to scholars, Petrarch is in his grave; and to the quick he has

long been well dead. The title of the book, moreover, must sound foreign to this age; and to any Protestant nose it must smell monkish and medieval. Yet even the most comprehensive ignorance can not annihilate the fact of the long generations of conflict and agony which have brought the present to birth; and the *Life of Solitude* is one of the neglected milestones along the line of march toward individual liberty and self-respecting integrity of the human spirit.

The importance of Petrarch's book appears only when it is read in its historic context, and then it is revealing of a man, an age, a civilization. It must be seen against its medieval background, and in relation to Petrarch's other works. And this is the splendid service performed by Mr. Zeitlin's comprehensive and informing introduction.

When Petrarch was born, Europe was sick.

With the failure of nerve that marked the death of classical civilization divorce was made between body and soul, and the human spirit, mutilated, disinherited, and blackened with the guilt of original sin, was crucified between the members and the will. Man was torn between a double allegiance: God and the Devil; heaven and earth; the soul and the body; church and state; the contemplative and the active life. Ethics was founded on obedience to dictates from without—dictates that each man in his orthodoxy declared to be founded on the word of God. Commanded to love his neighbor as himself, and taught to despise himself, he projected his self-accusations upon his fellowmen and was obedient in perfect hatred.

Petrarch, born to this inheritance, rebelled. Not all the fulminations of the Martyrs and the Fathers and the doctors could quite extinguish in him a liking for what he liked, nor wholly overwhelm him with guilt because his tastes were merely humanly what they were. The weight of organized authority was against him; yet he never quite succeeded in convincing himself of his errors. True, he did his best to believe that the herd judgment, as against his own native impulses, was right; and by a most persuasive rehearsal of the medieval point of view, in volume after volume, he tried to convert his unassenting heart. Therein he was the spokesman of his age, and his contemporaries awarded him the widest acclaim. By no hypocrisy in his own nature, he was most famous for those writings he least believed. His *De Remediis Utriusque Fortunæ*, for example, the most popular of his didactic works throughout Europe, has now not a spark of real vitality; but it was translated into all the principal tongues of Christendom and enjoyed an enormous vogue for centuries. The unreality of the performance was declared by Petrarch himself in a letter of his old age in which, while complacent over the success of his work, he admits that personally he had never

proved the efficacy of the remedies he had proposed. As for the austere pieties and higher reaches of the mystic vision, these he never pretended to strive to attain. He contritely professed his weaknesses, and this without great agony of self-debasement. His was a nature to suffer doubts in any age; and it is but natural that with the law and prophets against his personal intimations he should suffer long and deep misgivings. But to the end he had the courage of his weaknesses; therein lay his sanity and his strength. In temperament and essential healthiness of spirit very similar to Montaigne, he fell upon evil times. And his colossal vanity but bespeaks the need he felt for some bolstering of self-assurance in an age when a man was unique in Christendom who dared defend his right to his personal tastes and inclinations against the concerted authority of the rest of the world.

*The Life of Solitude,* now translated for the first time into English, is such a defense. As Mr. Zeitlin has shown in his introduction, Petrarch's work follows a long line of disquisitions by ancient moralists and Christian doctors on the relation of the duties of the active life to the ideal of contemplation. Whether from the point of view of philosophy or of religion, the two were treated by the predecessors of Petrarch as mutually indispensable ingredients in the composition of the perfect life. But in Petrarch we become aware of a decided departure from the traditional attitude. There is the old confusion of tendencies, the old medley of ideals; yet it is not difficult to distinguish between the vivid revelations he makes of a sincere mental attitude and the avowal, however sincere, of an accepted mode of thought. His purpose, beyond lip-service to much conventional sentiment, was to celebrate the beauty and delight of a life of leisure, retired from importunate worries and interruptions, and devoted to reading, literary creation, peaceful brooding, and the society of a few chosen friends. In his attitude there is more of Horace and Epicurus than of the Christian moralist or mystic. He alleges frankly a greater interest in himself than in his neighbor—"We know," he says, "where a well-ordered charity begins"; and in his retirement from the world he is interested more in self-realization than in abnegation. Specifically, solitude is recommended as meeting the needs of the student and the man of letters, and particularly of that student and man of letters known as Francis Petrarch. The argument takes shape finally not as a counsel of perfection to be generally applied, but as a vindication of the right of one man to regulate his life according to the disposition and humor with which nature has endowed him and without any reference to the claims of his fellow-men upon him. At the present time *The Life of Solitude* has little beyond a historic interest. But that it has eminently. Else-

where Petrarch gives fuller expression to his individual emotions, elsewhere he goes more deeply into the analysis of his moods; but in the *De Vita Solitaria* he comes closest to announcing in philosophical terms principles which have governed the expansion of the human intelligence in Europe since his day.

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*The Philosophy of William James. Drawn from his own works.* With an Introduction by HORACE M. KALLEN. New York. The Modern Library. 1926.

Mr. Kallen has attempted something difficult and dangerous. To arrange into systematic form the multitude of individual insights which made up the mind of William James would be impossible even for a German professor. Though this volume has the appearance of a systematic treatise, a glance reveals that the chapter headings are so loosely drawn as to admit of a variety of themes under each, and that the various items are fairly independent excerpts, each with its characteristic freshness and individuality. Accordingly, less violence is really done to James than the general purport of the book would indicate. It is impossible to expound "the philosophy" of James. The chief interest in the volume is rather its revelation of what *one* representative and alert thinker has found most significant in James. To criticize the selection of materials is fruitless inasmuch as all sorts of people can find all sorts of things in James, and "the true James" would (at least according to James himself) be a vicious abstraction. Mr. Kallen has suceeded, however, in portraying, both in his "Introductory Essay" and in the selections made from James' own writings, a much more impressive and catholic person than the James of more academic treatises. Technical problems and scientific analyses, while not neglected, are seen in their setting and against a background of the more general problems and interests which preoccupy reflective minds of any age. It is true, as Mr. Kallen points out in his Introduction, that very much in James' temperament and thinking reflects the spirit and the environment of pioneering, and that James is losing his relevance now that "the days of the pioneer are over (p. 48)"; but, as Mr. Kallen himself admits, this pioneering philosophy is prophetic and not merely the last vestige, preserved in the imagination, of an epoch that is spent. James revolt against the "genteel tradition" is sufficiently thorough-going to make him a leader and a pioneer of the mind of tomorrow. His love of individuality, of variety, and fluidity, his whole-hearted devotion to science, his artist temperament and aversion to moralism, are traits which are still in

process of development not only among his fellow victims of the American genteel tradition, but in Western society in general.

There is one emphasis in this volume, however, which certainly reflects Kallen more than James, the emphasis on "the American scene." It is another of the ironies of history that James, who was so obviously cosmopolitan by education and temperament, should go down as the philosopher of America. The preoccupation with the American scene and its nationalistic introspection is of recent date and is a vice of which James was singularly free. The chapter of excerpts on "the American scene," in fact, contains more discussions of scenery than of America.

Otherwise, the selections are representative of major themes in James' thinking, and are, besides, of special use in that they include many illuminating bits out of his less well known writings. Though the present volume is by no means as reliable and useful a guide to James as the *Everyman* edition of "Papers on Philosophy," it is a very welcome supplement, since the earlier volume contained merely James' major essays. The arrangement of the material in this volume will probably please even fewer readers than its selection will, but general agreement is here out of the question. The selection from "Percepts and Concepts" (p. 74 ff), I should say ought to come later, (in Ch. IV), and the insertion of a rather personal confession (pp. 155 ff.) interrupts an otherwise objective discussion of the Self.

There is one fundamental objection to this treatment of a man's writings. All sense of the evolution or temporal changes in the man's thinking is lost, and the impression is given that James' various opinions can be ranged side by side, whereas there is obviously, especially in a fluid mind like James', an element of growth or change characterizing an active mental career. The philosopher, the mind at work, is submerged, and we have presented merely the skeleton of his intellectual remains. Fortunately, however, Mr. Kallen's interesting biographical essay offsets to a considerable extent the mistaken impression gained from the text.

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## JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE. Bd. 100, Heft 5 u. 6. Neue Untersuchungen über die Zöllnerschen anorthoskopischen Zerrbilder: *F. Schumann*—(II) Die sukzessive Erfassung der Figuren: *E. L. Wenzel.* Die Anfänge der psychischen Entwicklung des

Kindes in allgemeinpsychologischer Beleuchtung: *O. Kroh.* Ueber die Grössenauffassung bei Kindern: *F. Beryrl.* Bibliographie der deutschen literatur des Jahres 1925 über Psychologie, ihre Hilfswissenschaften und Grenzgebiete, zusammengestellt von *Joh. Herrmann.*

Flewelling, Ralph Tyler: Creative Personality. A Study in Philosophical Reconciliation. Introduction by H. Wildon Carr. New York: Macmillan Co. 1926. 320 pp. $2.50.

Haldane, Viscount: The Pathway to Reality. Being the Gifford Lectures delivered in the University of St. Andrews, 1902–1904. New York: E. P. Dutton & Co. xxx + 600 pp. $5.00.

Margold, Charles W.: Sex Freedom and Social Control. Introduction by Edward T. Devine. Chicago: University of Chicago Press. 1926. 143 pp. $2.00

Radin, Paul, editor: Crashing Thunder. The Autobiography of an American Indian. New York: D. Appleton & Co. 1926. xxv + 203 pp. $2.50.

Robinson, Edward Stevens: Practical Psychology. Human Nature in Everyday Life. New York: Macmillan Co. 1926. xii + 479 pp.

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## NOTES AND NEWS

Announcement has been received of a new journal, the *Revue d'Histoire de la Philosophie,* the first number of which is to appear in January, 1927. It is to be issued under the direction of M. Emile Bréhier, of the Sorbonne, with the collaboration of MM. Ch. Andler, of the College de France; L. Brunschvieg, of the Sorbonne; A. Diès, of the Facultés Catholiques de l'Ouest; E. Gilson, of the Sorbonne; X. Léon, Director of the *Revue de Métaphysique et de Morale;* L. Lévy-Bruhl, of the Institut and professor at the Sorbonne; A. Rivaud, of the University of Poitiers; L. Robin, of the Sorbonne. It is the purpose of the new *revue* to bring together a group of workers who apply the methods of historical criticism to the interpretation of the works of philosophers of all times. It will carry original articles and reviews, not only of current books, but of other *revues.* It will appear quarterly. Subscriptions should be sent to J. Gamber, 7 rue Danton, Paris VI, France; 50 francs for France, 55 francs for foreign countries.